

Gynecological Morbidity among Women in the Reproductive Age: A Systematic Review

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Abstract

This study aimed at systematically reviewing the Gynecological Morbidity among women in the reproductive age by summarizing the prevalence of gynecological morbidity among reproductive age women is provided to develop research priorities. This systematic review was conducted based on PRISMA guidelines. The authors searched all published articles on the prevalence of gynecological morbidity. Electronic data bases such as PubMed were searched to identify observational studies on the subject. The study concluded that the pooled prevalence of overall gynecological morbidity was high. This pooled prevalence enabled us to conclude that the effect of gynecological morbidities is high to hamper the productivity of reproductive age women in the world particularly in a developing nations.

Acknowledgment

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1.1 Introduction

A healthy reproductive life is an essential component of the general health and well-being of a woman. Reproductive health problems constitute the leading cause of ill health in women of reproductive age group worldwide especially to those in developing countries. It accounts for 21.9% of the disability-adjusted life years lost by women aged 15–45 years (Abouzahr & Vaughan, 2000).

The universal access to reproductive health was identified as a developmental goal in the 1994 International conference for population and Development (ICPD) (WHO/UNFPA report, 2016).

After ICPD the major thrust was given in reducing total fertility rate and maternal mortality rate and improving the health of the women. The health of women is also affected by problems that are not related to pregnancy or child birth (*see table 1*). Hence giving focus more on mortality indicators may ignore many treatable gynecological conditions that cause significant distress in women's lives (Abraham, Varghese, Satheesh, Vijayakumar, Gopakumar & Mendez, 2014).

Table (1): Risk of dying from pregnancy

Region	Risk of Dying
Africa	1 in 16
Asia	1 in 65
Latin America and Caribbean	1 in 130
Europe	1 in 1,400
North America	1 in 3,700
All Developing Countries	1 in 48
All Developed Countries	1 in 1,800

Obstetrics, Gynecological, and Contraceptive morbidities are the three broad categories of reproductive morbidities. Gynecological morbidity is structural and functional disorder of the reproductive tract (genital tract). Gynecological morbidity is not related to pregnancy, delivery and puerperium, it may be related to sexual behavior (Jejeebhoy, Koenig & Elias, 2003).

Reproductive health problems are leading cause of women's ill health & death worldwide which constitutes about one third of total disease burden among women of reproductive age groups in developing countries. It result in 250 million years of reproductive life loss each year worldwide and reduce the overall productivity of women by as much as 20 % (Vibha, Verma & Doshi, 2012).

Addressing gynecological morbidity is a complex process as women either don't consider it a significant health problem or hesitate to talk on it & other determinants like illiteracy, ignorance, gender discrimination & poor social status, lack of decision making power especially in women from socially and economically backward areas, further complicates the problem and reduces reporting of cases and delayed treatment which ultimately

increases the prevalence (Gaash, Kausar & Bashir, 2005).

World Health Organization (WHO) estimates that 300 million women in developing countries suffer from short and long-term illnesses due to pregnancy and childbirth-related complications. Childbirth is the time of greatest lifetime risk of mortality for the mother and her baby (WHO, 2013).

Maternal mortality due to direct and indirect obstetric causes is one of the main factors which results in low life expectancy for women. Most of the maternal deaths occur within 24 hours of childbirth, followed by during pregnancy, within seven days of delivery and from two to six weeks after childbirth each accounting for 50%, 25%, 20% and 5% of maternal mortality respectively (Garg, Chhabra & Zothanzami, 2006).

Gynecological morbidities have negative impact on women health related quality of life, in terms of marital disharmony excluding them from social and religious life. The untreated conditions can cause pregnancy related complications, congenital infections, and chronic pain which significantly increase the risk of acquiring Pelvic inflammatory Disease and HIV.

Gynecological disorders have a substantial impact on female reproductive ability, and mental health ability which perform routine physical activities (Kaur, Jairus & Samuel, 2013).

1.2 Problem Statement

Relying on evidence derived from research into the issues surrounding women's health and gender, this study uses a rights-based approach founded particularly on the international law regimes to argue for a nationally led, coordinated approach to women's sexual and reproductive health, and recommends actions within seven key areas. The action areas are:

1. Promoting positive and respectful attitudes to sex and sexuality.
2. Developing women's health literacy.
3. Increasing reproductive choice.
4. Facilitating women's health throughout pregnancy and birth.
5. Expanding prevention and treatment of reproductive cancers and menstrual issues.
6. Improving prevention and treatment of sexually transmissible infections (STIs).
7. Equipping the health workforce to better respond to women's health needs.

There are no global wide studies on the magnitude of gynecological morbidities that can be used for policy advocacy. Therefore, the problem of this study stems out of its attempt to be summarizing the prevalence of gynecological morbidity among reproductive age women is provided to develop research priorities. The authors performed a systematic review and meta-analysis on studies conducted on gynecological morbidities which aimed at exploring the prevalence of gynecological morbidities among reproductive age women in the world.

1.3 Methods and producers

This systematic review was conducted based on PRISMA guidelines (*see figure 1*). The authors searched all published articles on the prevalence of gynecological morbidity. Electronic data bases such as PubMed were searched to identify observational studies on the subject (Moher, Liberati, Tetzlaff & Altman, 2009).

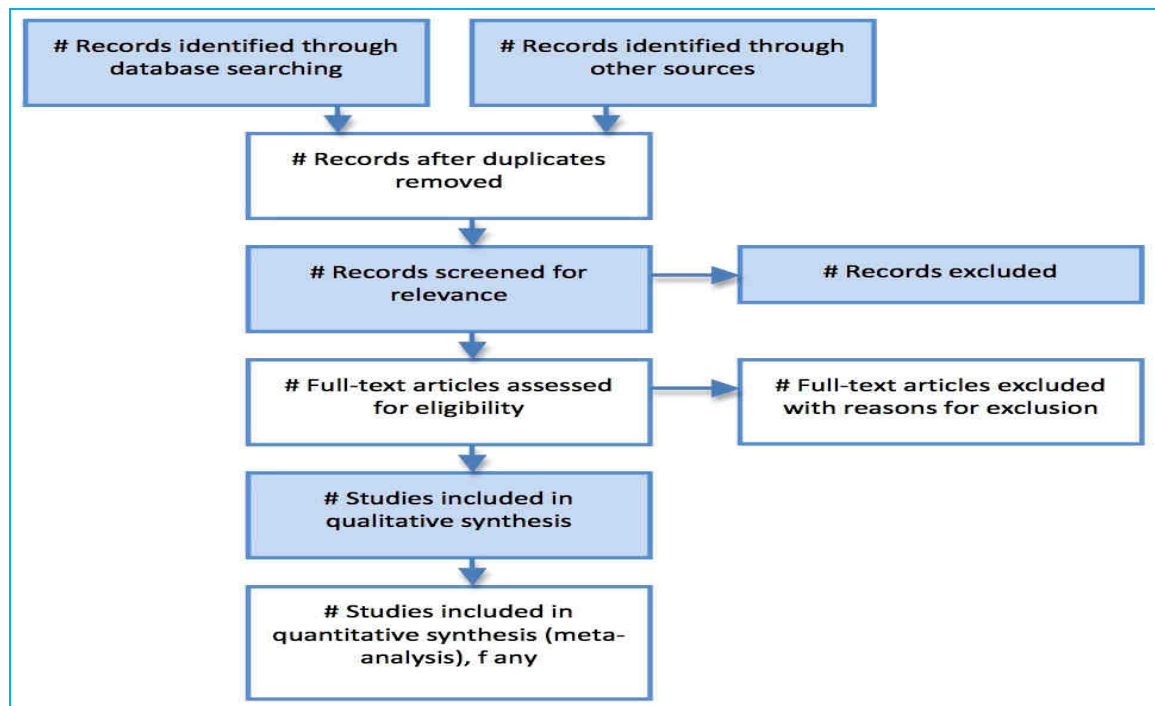


Figure (1): PRISMA guidelines

Papers were also identified by searching references from all included studies. No date restriction was applied in the search. The authors first screened the title, and abstracts. Then reviewed the full-text of the eligible articles.

The authors included all epidemiologic studies which reported the prevalence of gynecological morbidity among 15-49 years old women all over the world. Only studies which used random sampling or census data to find participants were included.

All source studies were original cross-sectional study or a baseline survey of longitudinal study which is written in English and contained the minimum information necessary to calculate pooled analysis of prevalence (number of the subjects and number of gynecological morbidity events).

Studies were included if they explicitly defined gynecological morbidity which in turn may include at least one types of gynecological morbidity (i.e. Reproductive tract infection, menstrual dysfunction, pelvic organ prolapse and infertility). The authors excluded studies if the participants were not in the age range of 15-49, pregnant women, if the study reported only the overall prevalence of gynecological morbidity without mentioning the morbidity types. The authors also excluded studies not only with qualitative study but also studies that utilized non-random sampling.

1.4 Data extraction

The standardized data abstraction form was designed to capture and code all relevant studies level information required for analysis. Authors selected the studies and extracted the data. For all included studies, we recorded the following information:

- Author
- Year of publication
- Countries
- Sampling method
- Data collection method
- Number of subjects
- Number of people with gynecological morbidity

1.5 Quality assessment of included studies

The authors used the Joanna Briggs Institute (JBI) Prevalence Critical Appraisal Tool to assess quality of individual paper as show in **table 2**.

Table (2): Quality assessment of the 18 paper used for the meta-analysis [Y= yes, N=No, U=unclear].

S. No	Author (year)	JBI Quality Items										Score
		1	2	3	4	5	6	7	8	9	10	
1	Abraham A et al. (2014)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
2	Verma A et al.(2015)	Y	Y	Y	Y	Y	N	U	Y	Y	N	7
3	Fahimeh et al.(2011)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
4	Filippi V et al. (1997)	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	9
5	Inamdar IF et al. (2013)	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	9
6	Masterson A et al.(2014)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8
7	Gokler M et al. (2014)	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	9
8	Miteshkumar N (2010)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
9	Bhatnagar N et al. (2013)	Y	Y	Y	Y	Y	U	U	Y	Y	Y	8
10	Philippov O et al. (1998)	Y	Y	Y	Y	N	Y	Y	U	N	N	6
11	Chellan R (2004)	N	N	N	N	N	N	N	N	N	N	10
12	Riyami et al. (2004)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
13	GargS et al. (2002)	U	Y	U	Y	Y	Y	U	Y	N	N	5
14	Poornima S et al. (2013)	Y	Y	Y	Y	Y	Y	Y	N	N	Y	8
15	Kaur S et al. (2013)	Y	N	U	N	Y	Y	Y	Y	Y	Y	7
16	Kumari S et al. (2000)	Y	U	U	N	Y	Y	Y	Y	Y	N	6
17	Siae M et al. (2002)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
18	Gosalia VV et al. (2012)	Y	Y	Y	Y	Y	N	N	N	N	N	5

1.6 Statistical analysis

To include proportion close to 0 and 1, we enabled the Freeman- Tukey double arcsine transformation option (ftt); otherwise, studies with estimated proportion at 1 and 0 would be excluded from the analysis leading to a biased pooled estimate. The transformed prevalence is weighted very slightly towards 50% and, thus, studies with prevalence of 0 can be included in the analysis.

Meta-analyses were conducted using the metaprop command for prevalence and metainf for influence of single study. Meta-analyses were conducted summarizing the prevalence of gynecological morbidity among women of reproductive age. First, the prevalence of each type of gynecological morbidity (pelvic organ prolapse, infertility, reproductive tract infection and menstrual disorder) was analyzed separately.

Then overall gynecological morbidity prevalence was assessed by stratifying by types of gynecological morbidities. According to the expected heterogeneity across studies, a random-effects model was used to calculate pooled prevalence. In all cases 95% confidence intervals were calculated using the binomial exact method to calculate. Statistical heterogeneity was evaluated with the Cochran chi-square (χ^2) and quantified with the I2 statistic (low is 25%, moderate 25-50%, high 50%).

Publication bias was evaluated by testing for funnel plot asymmetry, Begg's rank correlation test and Egger's linear regression test. Significance was set at a P value of less than 0.05. Sensitivity analyses include investigation of the influence of a single study on the combined association by omitting one study in the pooled analysis. All statistical calculations were made using the Stata Statistical Software Package, Version 12.0. Ancillary analyses were performed using comprehensive meta-analysis software.

1.7 Overall gynecological morbidity prevalence

Overall gynecological morbidity prevalence was assessed all types of gynecological morbidities by stratifying. Pelvic organ prolapse with 11 studies, infertility with 8 studies, reproductive tract infection with 15 studies, menstrual disorder with 11 studies, totally 44(some individual studies have more than one outcome variable) studies with 48,634 study population were included in the overall pooled summary of meta-analysis prevalence.

The point prevalence of gynecological morbidity with 44 individual study populations ranges from 0% (in pelvic organ prolapse) to 70% (in reproductive tract infection).

The overall pooled random effect meta-analysis prevalence of gynecological morbidity was 22% (95% CI=17%-27%, $I^2=99.38\%$, $p=0.000$).

1.8 Discussion

This is a comprehensive report attempting to sensitize the prevalence estimation of gynecological morbidity among reproductive age women by using meta-analysis. This comprehensive systematic review with meta-analysis of observational studies conducted in the world included 18 reports and 31,808 women population. Thus, it was possible to provide a reliable estimate of prevalence.

Our comprehensive systematic review and meta-analysis found that 10% of women have had pelvic organ prolapse, 7% of them were infertile; reproductive tract infection is the most 37% followed by menstrual disorder 28%. The pooled random model meta-analysis of overall gynecological morbidity is 22% (95% CI=17%-27%). The average number of complaints of gynecological morbidity ranges from (1.2-1.5); different types of gynecological morbidities may appear concurrently on individual women. The existence of some types may favor condition for the occurrence of the other (Inamdar, Sahu & Doibale, 2013).

The studies included in this analysis were conducted among reproductive age women at house hold level and health facility among women seeking care for other than gynecological problem. All the studies were observational epidemiological cross-sectional studies drawing sample population by random sampling method.

The response of clients on gynecological morbidity varies by place where interview is conducted and the profession of the interviewer. Respondents complained many types of problem when they were interviewed in a health facility and by health workers.

The proportion of women reporting symptoms were the higher when they were interviewed by physician at health facility than when they were interviewed by lay person at household level. This result strongly suggests that anticipation of treatment influences responses, either by overcoming silence or inviting exaggeration.

The result of the prospective study also suggests that repeated interview may elicit greater reporting symptoms than a single interview. Such a trend may reflect the development of closer rapport between respondent and interviewer over successive round or improved proficiency on the part of interviews. Therefore, the results of cross-sectional studies did not compared with prospective studies.

Addressing gynecological morbidity is a complex process as women either don't consider it as a significant health problem or hesitate to talk on it. Even though, women with gynecological morbidity face serious social consequences in terms of marital disharmony, exclusion from social and religious life.

Gynecological morbidity has a great impact on life of women, their child and family as well. Women with gynecological morbidity may be challenged with multifaceted health, psychological and social problem. According to WHO, reproductive ill health accounts for 36.6% of the total disease burden among women aged 15 to 45 years at a global level. It result in 250 million years of reproductive life loss each year in worldwide and reduce the overall productivity of women as much as 20%.

Majority of women do not seek health care until it becomes an emergency. Women were associated with causes of this morbidity with curse, evil eye, watch craft, excessive body heat, and sterilization. Some women accept the problem as normal health ill of women; as a result, they do not seek care. Certain untreated conditions can cause pregnancy related complications, congenital infections, infertility, chronic pain and significantly increase the risk of acquiring Pelvic Inflammatory Disease and HIV [41].

Gynecological morbidity was associated with illiteracy, ignorance, gender discrimination and poor social status, lack of decision making power and inability to afford seeking health care, parity, early mirage and age.

Cultural sensitive prevention, care and treatment are needed to alleviate the burden of this problem. Educating and empowering women are the magic bullet to maximize women's health and quality of life. In turn, healthy women contribute a lot for countries development.

High levels heterogeneity exhibited within the studies and among groups of studies the ($I^2=98.02\%$ - 99.20% , $p=0.00$). Egger's regression test indicated evidence of publication bias for gynecological morbidity ($p=0.004$ for pelvic organ prolapse and $p=0.03$ for infertility). But, there was no evidence of publication bias for reproductive tract infection ($p=0.40$), menstrual disorder ($p=0.14$) and overall gynecological morbidity ($p=0.23$). Begg's test indicated no evidence of publication bias of all types of gynecological morbidities.

Studies included in this analysis were conducted in different setup, geographic location, among participants of different cultural background and economic difference with different methodology. This variation leads to heterogeneity of the studies. In addition to this, the bias may be introduced into each study. Some of the paper asked whether participants have problem at any time in the life, in the past 6 month, in the past 3 month and other asked whether they are currently experiencing it. Recall periods of more than 2-4 weeks for closed question, or few days for open-ended questions, they appear to introduce bias from under reporting and misclassification.

Measurement and definition variation also affect the results of the same studies. This problem is more observed on menstrual disorder variable. The common recorded types of menstrual disorder include volume (heavy, normal or light), regularity (irregular, regular or absent), frequency (frequent, normal or infrequent), and duration (prolonged, normal or shortened) of menstrual episodes. Each term could be interpreted differently across the globe. To avoid this confusion, the Federation of International Gynecological and Obstetrics (FIGO) introduced a new classification called the PALMCOEIN system of abnormal uterine bleeding (AUB). The basic system comprises four categories that are defined by visually objective structural criteria (PALM: Polyp, Adenomyosis, Leiomyoma, and Malignancy or Hyperplasia); five (COEIN: Coagulopathy, Ovulatory disorders, Endometrium, iatrogenic and not yet classified).

Conclusion

The polled prevalence of overall gynecological morbidity was 22%. This prevalence is not an over estimated prevalence instead it may be underestimated because of silence of women in reporting the problem due to cultural influences, ignorance and embarrassment to talk about the problem. This study showed tips of the iceberg of gynecological morbidities, and the magnitude of the problem is more than the reported one. From this prevalence, we can conclude that the effect of gynecological morbidity is high to hamper the productivity of reproductive age of women in the world particularly in developing regions.

The common reported gynecological morbidities were reproductive tract infection and menstrual disorders. These might be more prevalent among reproductive age women than other. Pelvic organ prolapse is common among menopause women than reproductive age women. Heterogeneity was noted in this analysis for the studies were drawn all over the world with different back ground and methodology. The burden of gynecological morbidity was higher among economically and culturally disadvantaged women.

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